

## Claims

We claim:

1. A preparation of composite blastocysts (CBs) comprising cells derived from non-viable pre-embryos.
2. A preparation of CBs of Claim 1 which maintain the potential to differentiate.
3. A preparation of CBs of Claim 1 wherein the CB maintains the potential to differentiate into derivatives of ectoderm, mesoderm, and endoderm tissues.
4. The preparation of CBs of Claim 1 comprising cells derived from non-viable primate pre-embryos.
5. The preparation of CBs of Claim 1 comprising cells derived from non-viable human pre-embryos.
6. The preparation of CBs of Claim 1 comprising cells derived from non-viable and viable human pre-embryos.
7. A stem cell line isolated from the preparation of Claim 1.
8. A stem cell line isolated from the preparation of Claim 6.
9. A method of producing CBs comprising the steps of
  - a) dissociation of non-viable pre-embryos into non-nucleated and individual nucleated cells or groups of cells;
  - b) isolation of individual mononucleated cells or groups of mononucleated cells from disaggregated non-viable pre-embryos;
  - c) aggregation of isolated mononucleated cells or groups of mononucleated cells from non-viable pre-embryos in a host zona pellucida;
  - d) culturing of the zona-encapsulated cell aggregates to allow multiplication and differentiation of cells.
10. The method of Claim 9 wherein aggregation of the nucleated cells does not involve the use of a host zona pellucida.

11. The method of Claim 9 wherein one or more of the nucleated cells are derived from a viable embryo.
12. A method of isolating stem cell lines comprising the method of claim 9.
13. A method of isolating stem cell lines comprising the method of claim 11.

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